

IN THE SPECIFICATION

Kindly amend pages 15 and 25-29 as follows:

amount of F contained in the fluoride or fluorides should be 10 - 45% in order to minimize the change in refractive index of the glass due to the compaction phenomenon. The above described oxides may be substituted by fluorides and the above described fluorides may be substituted by oxides within a range in which the ratio of metal ion, oxygen ion and fluorine ion of the respective oxides and fluorides is maintained.

Examples

Examples of the optical glass made according to the invention will now be described. Examples No. 1 to No. 24 shown in Tables 1 to 4 are examples of composition of the SiO_2 -PbO-alkali metal oxide glass of the present invention. Examples No. 25 to No. 38 shown in Tables 5 and 6 are examples of composition of the SiO_2 - B_2O_3 -alkali metal oxide and/or alkaline earth metal oxide glass of the present invention. Examples No. 39 to 58 59 shown in Tables 7 to 9 are examples of composition of the P_2O_5 - Al_2O_3 -alkaline earth metal fluoride glass of the present invention.

Table 10 shows comparison (Comparison I and Comparison II) between Examples No. 60 59 to No. 64 63 of the SiO_2 -PbO-alkali meal oxide glass of the present invention and Comparative Examples No. A and No. B of the prior art glasses.

Table 11 shows comparison (Comparison III and Comparison IV) between Examples No. 65 64 and No. 66 65 of the SiO_2 - B_2O_3 -alkali metal oxide and/or alkaline earth metal oxide glass of the present invention and Comparative Examples No. C and No. D of the prior art glasses.

In Tables 1 to 11, Δn (ppm) represents an amount of change in refractive index between a state before radiation and a state after radiation in a portion where radiation of laser beam having beam diameter of 2.0mm, wavelength of 351 nm, average output power of 0.43W, pulse repetition rate of 5kHz and pulse width of 400ns has been radiated for 1 hour.

Table 9

(mass %)

	55	56	57	58	<u>58</u> 59
P ₂ O ₅	4.00	25.00	25.00	11.70	24.00
Al ₂ O ₃	1.00	7.00	6.00	2.80	6.00
AlF ₃	27.00			25.50	
MgF ₂	5.00			4.50	2.00
CaF ₂	21.00		5.00	13.50	2.00
SrF ₂	21.00	15.00	15.00	22.50	13.00
BaF ₂	16.00	19.00	23.00	12.50	27.00
YF ₃	5.00	10.00			
LaF ₃		5.00	10.00		5.00
NaF				1.00	
Y ₂ O ₃			10.00		5.00
La ₂ O ₃		10.00			5.00
Gd ₂ O ₃			5.00		
Yb ₂ O ₃					10.00
CaO				6.00	
SrO			1.00		
BaO		9.00			1.00
Total	100.00	100.00	100.00	100.00	100.00
F	37.52	29.12	14.87	36.59	13.13
Nd	1.4378	1.5816	1.5822	1.4562	1.5820
nd	97.1	70.2	69.9	90.0	70.1
Δ	0.1	0.1	0.2	0.1	0.1
n (ppm)					

Table 10

(mass %)

	Comparison I			Comparison II			
	59	60	60 61	Com. Ex. A	61 62	62 63	63 64
SiO ₂	63.00	65.30	66.00	53.10	53.05	52.00	53.10
Pb0	20.20	18.50	19.90	34.70	34.70	34.00	34.70
Na ₂ O	6.50	9.20	6.10	6.70	6.70	6.60	6.70
K ₂ O	7.90	6.70	7.70	5.20	5.20	5.10	5.20
As ₂ O ₃		0.30		0.30		0.30	
Sb ₂ O ₃	0.10		0.30		0.30		0.30
Al ₂ O ₃	0.40						
K ₂ SiF ₆	1.90					2.00	
TiO ₂					0.05		
total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
F	0.98					1.04	
Nd	1.5317	1.5317	1.5317	1.5786	1.5801	1.5717	1.5800
ν d	49.0	49.0	49.0	41.0	40.9	41.7	40.8
Δ	2.9	3.4	6.3	4.9	4.5	4.2	10.0
n (ppm)							

Table 11

(mass %)

	Comparison III			Comparison IV		
	64	65	Com. Ex. C	65	66	Com. Ex. D
SiO ₂		67.80	67.20	68.99		64.95
B ₂ O ₃		4.10	3.60	11.10		14.90
Al ₂ O ₃						2.30
Na ₂ O		12.10	12.50	9.55		9.25
K ₂ O		6.15	6.13	7.75		6.85
BaO		9.45	10.22	1.55		
ZnO				1.00		
PbO						1.60
TiO ₂		0.20		0.01		
Sb ₂ O ₃		0.20	0.35	0.05		0.15
Total		100.00	100.00	100.00		100.00
Nd		1.5184	1.5184	1.5163		1.5163
ν d		60.3	60.3	64.1		64.1
Δ n (ppm)		0.2	6.0	0.0		7.0

Table 12

(mass%)

No.	<u>66</u> <u>67</u>	<u>67</u> <u>68</u>	<u>68</u> <u>69</u>	<u>69</u> <u>70</u>	<u>70</u> <u>71</u>	<u>71</u> <u>72</u>	<u>72</u> <u>73</u>
SiO ₂	63.20	65.48	51.62	51.62	57.85	68.50	69.34
B ₂ O ₃					13.52	3.99	11.11
PbO	20.33	20.27	34.80	34.80			
K ₂ O	7.96	7.79	5.35	5.35	11.85	6.00	7.76
Na ₂ O	6.51	6.18	6.93	6.92		11.85	9.55
Al ₂ O ₃	0.37		0.20	0.20	0.50		
K ₂ SiF ₆	1.53		1.00	1.00	16.23		
As ₂ O ₃		0.28	0.10	0.10	0.01	0.20	0.03
Sb ₂ O ₃	0.10						
TiO ₂				0.01	0.04	0.20	0.01
BaO						9.26	1.19
ZnO							1.01
total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
F	0.79		0.52	0.52	8.40		
nd	1.53168	1.53145	1.57904	1.57807	1.48713	1.51820	1.51593
ν d	48.9	49.0	40.9	41.0	70.2	60.3	64.1

Table 13

		(mass%) Δn (ppm)													
No.		66	67	67	68	68	69	69	70	70	71	71	72	72	73
Average Output Power(W)	Time														
0.10	165hrs	0.2													
0.60	10min.	0.3													
0.60	15min.	0.3													
0.60	30min.	0.5													
0.60	1hour	0.5													
0.60	10min.		0.6												
0.60	1hour		1.1												
2.00	10min.				0.7										
1.20	15min.				1.0										
2.00	25min.				1.6										
2.00	10min.					0.5									
1.20	15min.					0.8									
2.00	25min.					1.3									
1.50	3hrs							0.0							
2.65	3hrs.									0.5					
2.65	3hrs.													0.6	